

WHAT IS CLAIMED IS:

1 1. A method for determining valid bytes in an m-byte
 2 word accessed from a burst memory, comprising:
 3 receiving a plurality of access parameters; and
 4 generating an m-bit enable word from the access
 5 parameters and a value of m, said m-bit enable word including
 6 at least one valid bit corresponding to at least one valid
 7 byte in the m-byte word.

1 2. The method of claim 1 further comprising making a
 2 client request to memory, wherein the access parameters
 3 include:
 4 a first address; and
 5 a byte count value indicating a number of bytes in
 6 said client request to memory.

1 3. The method of claim 2, wherein generating the m-bit
 2 enable word comprises:
 3 truncating a portion of the first address to produce
 4 an n-bit word;
 5 generating an enable value from the n-bit word, the
 6 byte count value, and the m value;
 7 generating an m-bit pre-shifted enable word from the
 8 enable value and the m value; and

9 shifting the bits in the m-bit pre-shifted enable
10 word by a value of the n-bit word.

1 4. The method of claim 3, wherein the n value equals a
2 base two logarithm of the m value minus one, and said n-bit
3 word comprises a plurality of bits between and including a
4 least significant bit and a bit in position n in the first
5 address.

1 5. The method of claim 3, further comprising:
2 in response to the byte count value and the enable
3 value, determining whether an access to memory satisfies a
4 client request which generated the access.

1 6. The method of claim 3, further comprising:
2 generating a second address for a subsequent access
3 to memory from the first address and the enable value.

1 7. The method of claim 1, wherein the value of m is
2 thirty-two.

1 8. A memory controller comprising:
2 a data input to receive a plurality of access
3 parameters from a client device and an access bytes value
4 indicating a number of bytes in a burst word from a memory
5 device; and

6 an enable circuit to determine at least one valid
7 byte in the burst word in response to the plurality of access
8 parameters and the access bytes value.

1 9. The memory controller of claim 8, wherein the
2 plurality of access parameters include:
3 a first address; and
4 a byte count value indicating a number of bytes in a
5 client request to memory.

1 10. The memory controller of claim 9, further
2 comprising:
3 an enable word generator to generate an enable word
4 including at least one valid bit corresponding to the at least
5 one valid byte in the burst word.

1 11. The memory controller of claim 10, wherein the burst
2 word comprises an m-byte word and the enable word comprises an
3 m-bit word.

1 ~~12.~~ A system comprising:
2 a memory device comprising a plurality of memory
3 elements, each memory element having an associated address;
4 a client device;

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5 a bus to pass data between the memory device and the
6 client device; and

7 a memory controller to control an access by the
8 client device to an m-byte burst word in the memory device
9 over the bus, said memory controller operating to receive a
10 plurality of access parameters from the client device and
11 determine at least one valid byte in the m-byte word in
12 response to the plurality of access parameters and a value of
13 m.

1 13. The system of claim 12, wherein the memory
2 controller comprises an enable word generator to generate an
3 enable word including at least one valid bit corresponding to
4 the at least one valid byte in the burst word.

1 14. The system of claim 12, wherein the memory
2 controller is operative to receive a client request to memory,
3 and wherein the plurality of parameters include:

4 a first address; and

5 a byte count value indicating a number of bytes
6 in said client request to memory.

1 15. The system of claim 14, wherein the memory
2 controller is operative to determine a second address for a
3 subsequent access for the plurality of access parameters.

1 16. The system of claim 15, wherein the client is
2 operative to store the second address.

1 17. The system of claim 12, wherein the memory device is
2 a burst memory device.

1 18. The system of claim 12, wherein the memory
2 controller is operative to determine whether the access is a
3 last access required to satisfy a client request.

1 19. The system of claim 12, wherein the bus comprises a
2 read bus and a write bus.

1 ~~20.~~ Apparatus, including instructions residing on a
2 machine-readable medium, for determining valid bytes in an m-
3 byte word accessed from a burst memory, said instructions
4 causing the machine to:

5 receive a plurality of access parameters; and
6 generate an m-bit enable word from the access
7 parameters and the m value, said m-bit enable word including
8 at least one valid bit corresponding to at least one valid
9 byte in the m-byte word.

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1 24. The apparatus of claim 22, further comprising
2 instructions that cause the machine to:
3 determine whether an access to memory satisfies a
4 client request in response to the byte count value and the
5 enable value.

1 25. The apparatus of claim 22, further comprising
2 instructions that cause the machine to:
3 generate a second address for a subsequent access to
4 memory from the first address and the enable value.

1 26. The apparatus of claim 20, wherein the value of m is
2 thirty-two.

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